PROGRAM: **Drafting and Design Technology**

PROGRAM CIP CODE: **15.1300**

DESCRIPTION: **The Drafting and Design Technology program is designed to prepare students to apply technical skills via computer assisted design and drafting to create two-dimensional and three-dimensional engineering designs. It includes instruction in specification interpretation, dimensioning techniques, drafting calculations, material estimation, technical communications, and computer applications. In addition to the occupation related skills, students completing this program will develop advanced critical thinking, applied academics, interpersonal relations, life management, and business, economic, and leadership skills required for the 21st century workplace. The Drafting and Design Technology program consists of a core curriculum and four areas of specialization for a student to choose from: Option A) Architectural Drafting, Option B) Civil Drafting, Option C) Electronics Drafting, and Option D) Mechanical Drafting. The program uses a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experience, and the Career and Technical Student Organization, SkillsUSA.**

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation 10-12

The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All the Career Preparation state-designated Drafting and Design Technology standards are addressed in this instructional sequence.

15.1300.10 Drafting and Design Technology Fundamentals: This course prepares students to apply technical knowledge and skills to plan and prepare scale interpretations of engineering, design and architectural projects. It includes instruction in creating layouts and designs, blueprints and renderings and in the use of computer-assisted design programs. In addition to knowledge of drafting technologies, students will have the opportunity to place special emphasis on more specific services and/or industries in which they have an interest.

-and-

One of the following Career Preparation courses (.20, .30, .40 or .50) will be included as part of the instructional sequence for this program:

Option A

15.1300.20 Architectural Drafting: This course prepares students to apply technical knowledge and skills to develop working drawings and electronic simulations for architectural and related construction projects. Includes instruction in basic construction and structural design, architectural rendering, layout and designs, blueprint interpretation, building materials and basic structural wiring diagramming.

-or-

Option B

15.1300.30 Civil Drafting: This course prepares students to apply technical knowledge and skills to develop working drawings and electronic simulations in support of civil and geological engineers. Includes instruction in basic civil engineering principles, geological and seismographic mapping, machine and pipe drafting, survey interpretation and blueprint reading.

-or-

Option C

15.1300.40 Electronics Drafting: This course prepares students to apply technical knowledge and skills to develop working schematics and representations in support of electrical/electronic and computer engineers. Includes instruction in basic electronics, electrical systems and computer layouts, electronic circuitry and electrical systems specification interpretation.

-or-

Option D

15.1300.50 **Mechanical Drafting: This course prepares students to apply technical knowledge and skills to develop working drawings and electronic simulations in support of mechanical and industrial engineers. Includes instruction in manufacturing materials and processes, mechanical drafting, basic metallurgy, geometric dimensioning and tolerance, blueprint reading and technical communications.**

And program may elect to add:

15.1300.75 **Drafting and Design Technology - Internship: This course provides CTE students an opportunity to engage in learning through participation in a structured work experience, that can be either paid or unpaid and does not necessarily require classroom instruction, that involves the application of previously developed Drafting and Design Technology knowledge and skills.**

-or-

15.1300.80 **Drafting and Design Technology - Cooperative Education: This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Drafting and Design Technology program.**

TEACHER CERTIFICATION REQUIREMENTS FOR THE DRAFTING AND DESIGN TECHNOLOGY PROGRAM

CAREER PREPARATION: The instructor must be vocationally certified according to the following table:

	CERTIFICATES	
Drafting and Design Technology	**Types: BVT, SVT** **Approved Areas: ITT, VTT**	**Types: PVI, SVI, PCTI, SCTI** **No Approvals Necessary**

Note:

- **Drafting and Design Technology, 15.1300.70 may be a part of the sequence and the teacher must hold a Cooperative Education Endorsement (CEN).**
- **Teacher/Coordinator 15.1300.75 is required to have a Cooperative Education Endorsement (CEN).**
- **Teacher/Coordinator 15.1300.80 is required to have a Cooperative Education Endorsement (CEN).**

CERTIFICATE ABBREVIATIONS FOR THE DRAFTING AND DESIGN TECHNOLOGY PROGRAM

Certificate Types		Approved Areas List	
BVT	**Basic Vocational Education**	**ITT**	**Industrial Technology Education**
PCTI	**Provisional Career and Technical Education Industrial Technology**	**VTT**	**Vocational Trade and Technical Education**
PVI	**Provisional Vocational Industrial Technology**		
SCTI	**Standard Career and Technical Education Industrial Technology**		
SVI	**Standard Vocational Industrial Technology**		
SVT	**Standard Vocational Education**		